TR-3200E

User Manual

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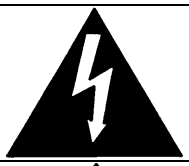
IMPORTANT SAFETY INSTRUCTIONS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.

- Read and keep these instructions
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT

WARNING:
THIS EQUIPMENT USES POWER/MAINS CONNECTORS FITTED WITH SAFETY GROUND PINS. TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE GROUND PIN OF THE MAINS PLUG MUST BE MAINTAINED. IN ADDITION GROUNDING OF GROUND TERMINAL ON THE MAIN EQUIPMENT CHASSIS MUST BE MAINTAINED.

WARNING:
DANGEROUSLY HIGH VOLTAGES ARE PRESENT INSIDE THE POWER SUPPLY FRAME.

WARNING:
TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE THIS EQUIPMENT MAY HAVE MORE THAN ONE POWER SUPPLY CORD. TO REDUCE THE RISK OF ELECTRIC SHOCK, DISCONNECT ALL POWER SUPPLY CORDS BEFORE SERVICING.

CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified personnel.

CAUTION: To reduce the risk of electric shock, plug each power supply cord into separate branch circuits employing separate service grounds.

NEVER use flammable or combustible chemicals for cleaning components.
NEVER operate this product with any covers removed.
NEVER wet the inside of this product with any liquid.
NEVER bypass any fuse or replace any fuse with a value or type other than those specified.
NEVER operate this product in an explosive atmosphere.
NEVER block the airflow through ventilation slots.
NEVER expose this product to extremely low or high temperatures.

This product complies with the requirements of the product family standards for video, audio, audio-visual entertainment, and lighting control apparatus for professional use as mentioned below.

INFORMATION TO USERS IN EUROPE

NOTE

This equipment with the CE marking complies with bother the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

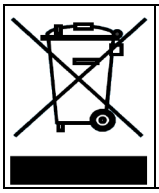
Compliance with these directives implies conformity to the following European standards:

- EN60065 Product Safety
- EN55103-1 Electromagnetic Interference Class A (Emission)
- EN55103-2 Electromagnetic Susceptibility (Immunity)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE

EN60065	Safety
EN55103-1: 1996	Emission
EN55103-2: 1996	Immunity



EN504192 2005
Waste electrical products should not be disposed of with household waste. Contact your Local Authority for recycling advice

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must

Evertz Microsystems Ltd

FC

For Home or Office Use

Tested to comply with FCC Standards

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First release	Feb 2013

1 OVERVIEW

The TR-3200E Tally router is used in conjunction with MAGNUM-TALLY. It receives tally inputs from a device, such as a vision mixer, and provides this information to MAGNUM-TALLY which then processes the information. The information can then be used by MAGNUM-TALLY to provide tally information to cameras, Under Monitor Displays (UMDs), switchers, etc.

The TR-3200E Tally router provides up to 64 tally inputs and up to 32 tally outputs.

Features:

- 64 tally inputs
- 32 tally outputs
- Housed in a 1RU frame

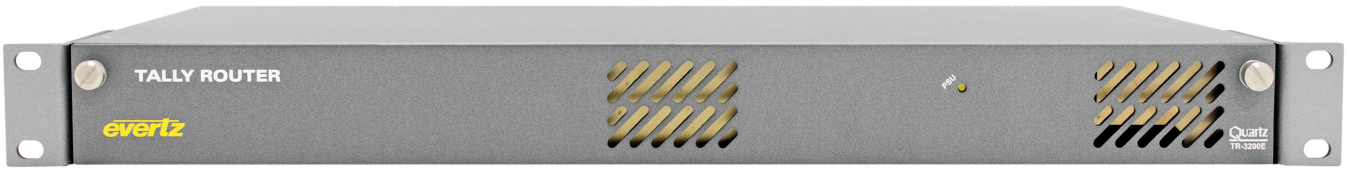

Figure 1-1: Front Panel View

Figure 1-2: Rear Panel View

2 INSTALLATION

The Tally router is designed to fit into standard 19" equipment racks. It can be mounted at any angle. Rack-mount flanges (or ears) are vulnerable to damage so these are packed separately for protection and must be removed from the accessory kit and fitted to the sides of the unit with the screws supplied in the kit.

Installation in a 19" rack is simple. Guide the unit through the aperture in the front of the rack until the rack-mounting flanges are flush against the side member of the rack and bolt in place with fixing screws (not supplied).

Behind the unit you should allow for a depth of 170mm plus provision for the connection of external cables.

2.1 ELECTRICAL CONNECTIONS

The chassis ground pin of the 25 way D-type connectors is connected to the earth of the power plug and the metalwork. Use mating connectors with tin plating and metal hoods to maintain earth continuity and RFI shielding. Also connect the shield of the control cable to the ground pin for RFI shielding.

Note that the connectors and their hoods must not exceed 17mm width. Some designs are wider than this and will not fit correctly the rear of the unit if both rows are used.

2.2 INPUT PORTS

These ports are used to read the tallies from, say, the vision mixer (production switcher) and use standard 25 way D-type socket connectors.

1. The mixer tally output will usually be an isolated circuit i.e. a relay. The receiver circuit in the Tally router has its own logic pull-up so there should be no need for extra interface circuitry. Nevertheless some small amount of power is made available for special purposes. Please take note of the ratings below.

2. Connect one pin of the mixer tally to an input pin. Note that +0.8v is the permitted maximum value of voltage for a valid low reading.

3. Connect the other pin of the mixer tally (or common) to the common 0 volts pin of the connector pin 24. This pin is connected to the technical ground within the Tally Router.

The list below shows the pin connections of the D25 socket connectors on the rear of the unit.

Pin	Signal
1	Input 1
2	Input 2
3	Input 3
4	Input 4
5	Input 5
6	Input 6
7	Input 7
8	Input 8
9	Input 9
10	Input 10
11	Input 11
12	Input 12
13	Input 13
14	Input 14
15	Input 15
16	Input 16
17	not used
18	not used
19	not used
20	not used
21	not used
22	+5 volts dc (50mA total, the whole unit)
23	+24 volt dc (50mA total, the whole unit)
24	0 volts (technical ground)
25	ChassisGround

2.3 OUTPUT PORTS

These ports are used to drive the camera tally lamps and use standard 25 way D-type socket connectors.

1. The tally output is an isolated closing relay contact pair. The camera will normally provide the power to drive its lamp. Nevertheless some small amount of power is made available for special purposes. Please take note of the ratings below, as this unit is not able to provide sufficient current to drive camera tally lamps.

2. Connect the contact pair to the pins shown below.

The list below shows the pin connections of the D25 socket connectors on the rear of the unit.

Pin	Signal
1	Output 1A
2	Output 1B
3	Output 2A
4	Output 2B
5	Output 3A
6	Output 3B
7	Output 4A
8	Output 4B
9	Output 5A
10	Output 5B
11	Output 6A
12	Output 6B
13	Output 7A
14	Output 7B
15	Output 8A
16	Output 8B
17	not used
18	not used
19	not used
20	not used
21	not used
22	+5 volts dc (50mA total for whole unit)
23	+24 volts dc (50mA total for whole unit)
24	0 volts (technical ground)
25	Chassis Ground

2.4 SETTING THE POWER LINE VOLTAGE

The voltage must be checked and if necessary set prior to inserting the power cord. The 230v setting is suitable for both 220v and 240v countries. The 115v setting is suitable for 110v and 120v countries.

1. Remove the power cord.

2. Use a small screwdriver to ease loose the voltage selector/fuse holder by prising from above.

3. Pull out the fuse drawer. The main fuse is clearly visible, however, there is also a spare slid inside the drawer. The fuse rating is shown on the serial number plate of the unit.

4. Rotate the drawer so that the correct power line voltage is orientated to be read (top of the text up) with the top of the frame also facing upwards. Fit the correct fuse and replace the fuse holder drawer until it snaps home.

5. Plug in the power cord into the equipment.

2.5 MAINTENANCE

First of all isolate the problem to the Tally Router. The +24v and +5v external supplies fed from the Tally Input/Output Ports are protected from damage by quick blow fuses. If a fuse has blown it does not affect the internal circuitry. Remove the front panel to reveal a red LED towards the right-hand side of the unit. This will light only if either of the fuses has blown. The adjacent yellow LED indicates the presence of the main +24v supply within the unit. Check and, if necessary, replace with a fuse of the same type and rating (1A quickblow).

3 CONFIGURATION

3.1 SETTING THE IP ADDRESS

1. Open WinSetup 3.45 with a white 'Quartz Serial Cable' between the PC and the front DB-9 of the unit.
2. Click 'Options' > 'Communications' to select the 'Use Serial Communications' pick the appropriate Port for your PC, 38400, none, 8, 1
3. Click 'System' > 'Ethernet Configuration', and an IP Config window will open.
4. Query Router will print what the router IP is set to.
5. Fill in the IP, Subnet Mask and Gateway appropriately.
6. Update to send changes to the router.
7. An 'Update' window will appear to indicate a reboot is required. Click 'OK' and reboot the router.
8. Once the router is booted ensure you can ping for 30 seconds.

3.1.1 The Quartz Serial Cable

The Quartz Serial cable is fitted with both a male and female connector. Please see Figure 3-1 for an example of what the supplied "Quartz Serial Cable" looks like.

Figure 3-1: Quartz Serial Cable

If you are making your own cable then the interface cable needs a D9 socket at the PC end and a D9 plug at the router end. The cable must have the following connections.

PC D9 skt Quartz D9 plg
pin 3 (Tx) -----to----- pin 3 (Rx)
pin 2 (Rx) -----to----- pin 7 (Tx)
pin 5 (0v) -----to----- pin 6 (0v)

3.2 ROUTER CONFIGURATION

1. No router configuration is required from WinSetup or other means; this device has all required functionality hard coded.

4 SPECIFICATIONS

4.1 INPUTS

Input: < 0.8V for logic low
> 3.5V or open circuit for logic high
Connectors: D25 female
Four for inputs, each with 16 lines

4.2 OUTPUTS

Normally Open Contacts:
Gold over silver palladium
Contact Resistance: 1Ω max.
Operate/Release Time:
10ms max.
Contact Rating: 0.5A @ 24V DC resistive load
0.15A @ 100V rms. AC
Service Life: 1.0x106 at low load
0.5x106 at full load
Connectors: D25 female
Four for outputs, each with 8 relays

4.3 ETHERNET

Ethernet: Standard Ethernet interface for connection to MAGNUM-TALLY
RJ45

4.4 CONTROL

Control: MAGNUM-TALLY

4.5 POWER

Supply: 100-240V, 50/60Hz
Consumption: 15W

4.6 PHYSICAL

Height: 1RU, 44mm (1.75” nom.)
Width: 19” rack mount
Depth: 11” (280mm)
Weight: 2.5kg
Operating Temp: 0-40°C
Ventilation Natural: Convection